Topic 19: Hypothesis Testing and Confidence Intervals

Test ID: 8450948

Question #1 of 82

Question ID: 438835

The table below shows a sample of returns on two securities:

Period	1	2	3	4	*Mean*
Security P	0.2%	0.5%	1.1%	−0.6%	*0.3%*
Security Q	−0.3%	0.9%	1.5%	−0.5%	*0.4%*

The sample covariance between the two securities' returns is closest to:

A) 0.78.

B) 1.86.

C) 0.47.

D) 0.62.

Question #2 of 82

Question ID: 438853

Robert Patterson, an options trader, believes that the return on options trading is higher on Mondays than on other days. In order to test his theory, he formulates a null hypothesis. Which of the following would be an appropriate null hypothesis? Returns on Mondays are:

A) not less than returns on other days.

B) less than returns on other days.

C) not greater than returns on other days.

D) greater than returns on other days.

Question #3 of 82

Question ID: 438878

Which of the following statements about hypothesis testing is *most* accurate?

A) The probability of a Type I error is equal to the significance level of the test.

B) To test the claim that X is greater than zero, the null hypothesis would be H_0: X > 0.

C) If you can disprove the null hypothesis, then you have proven the alternative hypothesis.

D) The power of a test is one minus the probability of a Type I error.

Questions #4-5 of 82

Margo Hinsdale is testing the null hypothesis that the population mean is less than or equal to 45. A random sample of 81 observations selected from this population produced a mean of 46.3. The population has a standard deviation of 4.5.

Question #4 of 82

Question ID: 438890

The value of the *appropriate* test statistic for the test of the population mean is:

A) t = 4.60.

B) z = -2.75.

C) z = 2.60.

D) t = 3.84.

Question #5 of 82

Question ID: 438891

At a 1 percent level of significance, the correct decision is to:

A) reject the null hypothesis.

B) neither reject nor fail to reject the null hypothesis.

C) fail to reject the null hypothesis.

D) accept the null hypothesis.

Questions #6-9 of 82

An analyst is testing to see if the mean of a population is less than 133. A random sample of 50 observations had a mean of 130. Assume a standard deviation of 5. The test is to be made at the 1% level of significance.

z	*0.00*	*0.01*	*0.02*	*0.03*	*0.04*	*0.05*	*0.06*
0.0	0.0000	0.0040	0.0080	0.0120	0.0160	0.0199	0.0239
0.1	0.0398	0.0438	0.0478	0.0517	0.0557	0.0596	0.0636
0.2	0.0793	0.0832	0.0871	0.0910	0.0948	0.0987	0.1026
0.3	0.1179	0.1217	0.1255	0.1293	0.1331	0.1368	0.1406
|	|	|	|	|	|	|	|
1.7	0.4554	0.4564	0.4573	0.4582	0.4591	0.4599	0.4608
1.8	0.4641	0.4649	0.4656	0.4664	0.4671	0.4678	0.4686
1.9	0.4713	0.4719	0.4726	0.4732	0.4738	0.4744	0.4750
2.0	0.4772	0.4778	0.4783	0.4788	0.4793	0.4798	0.4803
2.1	0.4821	0.4826	0.4830	0.4834	0.4838	0.4842	0.4846
2.2	0.4861	0.4864	0.4868	0.4871	0.4875	0.4878	0.4881
2.3	0.4893	0.4896	0.4898	0.4901	0.4904	0.4906	0.4909
2.4	0.4918	0.4920	0.4922	0.4925	0.4927	0.4929	0.4931

Question #6 of 82

Question ID: 438861

The null hypothesis is:

A) $\mu > 133$.

B) $\mu \geq 133$.

C) $\mu \leq 133$.

D) $\mu = 133$.

Question #7 of 82

Question ID: 438862

The calculated test statistic is:

A) +1.33.

B) -3.00.

C) -1.33.

D) -4.24.

Question #8 of 82

Question ID: 438863

The critical value is:

A) -2.38.

B) 2.47.

C) -2.33.

D) 2.17.

Question #9 of 82

Question ID: 438864

You should:

A) Cannot be determined with the information given.

B) accept the null hypothesis.

C) reject the alternative hypothesis.

D) reject the null hypothesis.

Question #10 of 82

Question ID: 438852

Brian Ci believes that the average return on equity in the airline industry, μ, is less than 5%. What are the appropriate null (H_0) and alternative (H_a) hypotheses to test this belief?

A) H_0: $\mu > 0.05$ versus H_a: $\mu < 0.05$.

B) H_0: $\mu < 0.05$ versus H_a: $\mu > 0.05$.

C) H_0: $\mu \geq 0.05$ versus H_a: $\mu < 0.05$.

D) H_0: $\mu < 0.05$ versus H_a: $\mu \geq 0.05$.

Question #11 of 82

Question ID: 438832

A sample covariance of two random variables is most commonly utilized to:

A) demonstrate either the presence or absence of spurious correlation of the variables.

B) estimate the "pure" measure of the tendency of two variables to move together over a period of time.

C) identify and measure strong nonlinear relationships between the two variables.

D) calculate the correlation coefficient, which is a measure of the strength of their linear relationship.

Question #12 of 82

Question ID: 438898

The test statistic for an F-test of the equality of two sample variances is the:

A) product of the two sample standard deviations.

B) ratio of the two sample variances.

C) product of the two sample variances.

D) ratio of the two sample standard deviations.

Question #13 of 82

Question ID: 438849

The approximate 99% confidence interval for the population mean based on a sample of 60 returns with a mean of 7% and a sample standard deviation of 25% is *closest* to:

A) 1.546% to 13.454%.

B) 0.546% to 13.454%.

C) -1.584% to 15.584%.

D) 1.584% to 14.584%.

Questions #14-18 of 82

An analyst is conducting a hypothesis test to determine if the mean time spent on investment research is different from 3 hours per day. The test is performed at the 5 percent level of significance and uses a random sample of 64 portfolio managers, where the mean time spent on research is found to be 2.5 hours. The population standard deviation is 1.5 hours.

Question #14 of 82

Question ID: 438884

The appropriate null hypothesis for the described test is:

A) H_0: $\mu \geq 3$ hours.

B) H_0: $\mu \neq 3$ hours.

C) H_0: $\mu = 3$ hours.

D) H_0: $\mu \leq 3$ hours.

Question #15 of 82

Question ID: 438885

Which type of test is this?

- **A)** Two-tailed test.
- **B)** Chi-square test.
- **C)** One-tailed test.
- **D)** Equity of variance test.

Question #16 of 82

Question ID: 438886

The calculated *z*-statistic is:

- **A)** +2.67.
- **B)** -2.13.
- **C)** +0.33.
- **D)** -2.67.

Question #17 of 82

Question ID: 438887

The critical *z*-value(s) of the test statistic is (are):

- **A)** ± 1.96.
- **B)** -1.96.
- **C)** ± 2.58.
- **D)** +1.96.

Question #18 of 82

Question ID: 438888

Which of the following decisions is the **CORRECT** decision for this study?

- **A)** Fail to reject the null hypothesis.
- **B)** Reject the null hypothesis.
- **C)** No decision is possible because the sample standard deviation was not given.
- **D)** The sample size is too small, so increase the sample size.

Question #19 of 82

Question ID: 438899

What is the computed value of the test statistic that follows an *F*-distribution when sample variances are equal and the level of significance is 0.10?

- **A)** 0.90.
- **B)** 0.05.
- **C)** 1.00.
- **D)** 0.10.

Question #20 of 82

Question ID: 438846

The average U.S. dollar/Euro exchange rate from a sample of 36 monthly observations is $1.00/Euro. The population variance is 0.49. What is the 95% confidence interval for the mean U.S. dollar/Euro exchange rate?

A) $0.8657 to $1.1343.

B) $0.5100 to $1.4900.

C) $0.7713 to $1.2287.

D) $0.8075 to $1.1925.

Question #21 of 82

Question ID: 438834

You observe the following pairs of annual returns on a sample of two stocks: [(0.03, 0.01), (0.06, 0.06), (0.02, 0.05), (0.13, 0.08)]. The covariance of the returns on the two stocks is *closest* to:

A) 0.0011.

B) 0.0033.

C) 0.00165.

D) 0.0008.

Question #22 of 82

Question ID: 438868

A Type I error occurs when the null hypothesis:

A) fails to be rejected when it is false.

B) is rejected when it is true.

C) is rejected when it is false.

D) fails to be rejected when it is true.

Question #23 of 82

Question ID: 438859

An analyst conducts a two-tailed z-test to determine if small cap returns are significantly different from 10%. The sample size was 200. The computed z-statistic is 2.3. Using a 5% level of significance, which statement is *most* accurate?

A) Fail to reject the null hypothesis and conclude that small cap returns are close enough to 10% that we cannot say they are significantly different from 10%.

B) You cannot determine what to do with the information given.

C) Reject the null hypothesis and conclude that small cap returns are significantly different from 10%.

D) A sample size of 200 indicates that we should fail to reject the null.

Question #24 of 82

Question ID: 438876

The mean monthly return for an equity portfolio over 60 months is 1.5 percent. The standard deviation is 3.0 percent. The value of the test statistic to test the hypothesis that mean monthly return is equal to zero is *closest* to:

A) 3.87.

B) 30.00.

C) 2.19.

D) 0.50.

Question #25 of 82

Question ID: 438873

A survey is taken to determine whether the average starting salaries of CFA charterholders is equal to or greater than $59,000 per year. What is the test statistic given a sample of 135 newly acquired CFA charterholders with a mean starting salary of $64,000 and a standard deviation of $5,500?

A) -0.91.

B) -10.56.

C) 10.56.

D) 0.91.

Question #26 of 82

Question ID: 438882

Which of the following statements about hypothesis testing is *most* accurate?

A) When the critical Z-statistic is greater than the sample Z-statistic in a two-tailed test, reject the null hypothesis and accept the alternative hypothesis.

B) A Type I error is rejecting the null hypothesis when it is true, and a Type II error is accepting the alternative hypothesis when it is false.

C) A hypothesized mean of 3, a sample mean of 6, and a standard error of the sampling means of 2 give a sample Z-statistic of 1.5.

D) A two-tailed test on a large sample with a significance level of 0.01 has confidence intervals of ±1.96 standard errors.

Question #27 of 82

Question ID: 438851

Susan Bellows is comparing the return on equity for two industries. She is convinced that the return on equity for the discount retail industry (DR) is greater than that of the luxury retail (LR) industry. What are the hypotheses for a test of her comparison of return on equity?

A) H_0: $\mu_{DR} \leq \mu_{LR}$ versus H_a: $\mu_{DR} > \mu_{LR}$.

B) H_0: $\mu_{DR} = \mu_{LR}$ versus H_a: $\mu_{DR} \neq \mu_{LR}$.

C) H_0: $\mu_{DR} \neq \mu_{LR}$ versus H_a: $\mu_{DR} = \mu_{LR}$.

D) H_0: $\mu_{DR} = \mu_{LR}$ versus H_a: $\mu_{DR} < \mu_{LR}$.

Questions #28-32 of 82

Austin Roberts wants to test if the mean price of houses in the area is greater than $145,000. A random sample of 36 houses in the area has a mean price of $149,750. The population standard deviation is $24,000, and Roberts wants to conduct hypothesis testing at a 1 percent level of significance.

Question #28 of 82

Question ID: 438893

The appropriate alternative hypothesis is:

A) H_a: μ ± $145,000.

B) H_a: μ > $145,000.

C) H_a: μ < $145,000.

D) H_a: μ &ge $145,000.

Question #29 of 82

Question ID: 438894

The value of the calculated test statistic is *closest* to:

A) z = 0.67.

B) z = 8.13.

C) z = 4.00.

D) z = 1.19.

Question #30 of 82

Question ID: 438895

Which of the following *most accurately* describes the appropriate test structure?

A) One-tailed test.

B) Two-tailed test.

C) *F*-test.

D) Chi-square test.

Question #31 of 82

Question ID: 438896

The critical value of the *z*-statistic is:

A) z = ±2.33.

B) z = ±1.96.

C) z = +2.33.

D) z = -2.33.

Question #32 of 82

Question ID: 438897

At a 1 percent level of significance, Roberts should:

A) fail to reject the null hypothesis.

B) reject the null hypothesis.

C) accept the null hypothesis.

D) neither reject nor fail to reject the null hypothesis.

Question #33 of 82

Question ID: 438821

Assume that the following returns are a sample of annual returns for firms in the clothing industry. Given the following sample of returns, what are the sample variance and standard deviation?

Firm 1	*Firm 2*	*Firm 3*	*Firm 4*	*Firm 5*
15%	2%	5%	(7%)	0%

	Variance	Standard Deviation
A)	64.5	8.0
B)	51.6	7.2
C)	22.0	4.7
D)	32.4	5.7

Question #34 of 82

Question ID: 438870

Which of the following statements about testing a hypothesis using a Z-test is *least* accurate?

A) If the calculated Z-statistic lies outside the critical Z-statistic range, the null hypothesis can be rejected.

B) A Type I error is rejecting the null hypothesis when it is actually true.

C) The calculated Z-statistic determines the appropriate significance level to use.

D) The confidence interval for a two-tailed test of a population mean at the 5% level of significance is that the sample mean falls between ±1.96 σ/√n of the null hypothesis value.

Questions #35-37 of 82

John Starwall, CFA, is assigned the task of estimating the risk and return for security X, which is being considered as an addition to his current portfolio. If the investment is accepted, then the total portfolio will consist of five different equities that are not highly correlated. Security X has an estimated beta of 1.4. The probabilities of various states of the economy and the expected return for security X given each state are as follows:

State of	P_i	$E(R_i)$

Economy		
Recession	0.3	0.01
Average Economy	0.6	0.10
Boom	0.1	0.20

Question #35 of 82

Question ID: 438823

Based on the information above, what is the estimated expected return for security X?

A) 15.5%.

B) 8.3%.

C) 10.0%.

D) 8.0%.

Question #36 of 82

Question ID: 438824

Based on the information above, what is the estimated standard deviation for security X?

A) 10.1%.

B) 5.6%.

C) 7.8%.

D) 0.3%.

Question #37 of 82

Question ID: 438825

Based on the information above, what are the appropriate measures for assessing whether or not this security should be added to the portfolio?

A) Expected return and standard deviation of the security.

B) Beta and standard deviation of the security.

C) Expected return, beta, and standard deviation of the security.

D) Expected return and beta of the security.

Question #38 of 82

Question ID: 438858

An analyst conducts a two-tailed test to determine if mean earnings estimates are significantly different from reported earnings. The sample size is greater than 25 and the computed test statistic is 1.25. Using a 5% significance level, which of the following statements is *most* accurate?

A) To test the null hypothesis, the analyst must determine the exact sample size and calculate the degrees of freedom for the test.

B) The analyst should reject the null hypothesis and conclude that the earnings estimates are significantly different from reported earnings.

C) The analyst should fail to reject the null hypothesis and conclude that the earnings estimates are not significantly different from reported earnings.

D) The appropriate test to apply is a two-tailed chi-square test.

Questions #39-42 of 82

Two samples were drawn from a normally distributed population. For the first sample, the mean was \$50, and the standard deviation was \$5. For the second sample, the mean was \$55, and the standard deviation was \$6. The first sample consists of 25 observations, and the second sample consists of 36 observations. *(Note: In the following questions, the subscripts "1" and "2" indicate the first and second sample, respectively.)*

Question #39 of 82

Question ID: 438905

Consider the hypotheses structured as H_0: μ_1 = \$48 versus H_a: $\mu_1 \neq$ \$48. At a 1 percent level of significance, the null hypothesis:

A) should be rejected.

B) cannot be tested using this sample information provided.

C) should neither be rejected nor fail to be rejected.

D) cannot be rejected.

Question #40 of 82

Question ID: 438906

Using a 5 percent level of significance and a hypothesis test structure of $H_0\colon\ \sigma_1^2 \leq 24$ versus $H_a\colon\ \sigma_1^2 > 24$, the null hypothesis:

A) cannot be rejected.

B) should neither be rejected nor fail to be rejected.

C) should be rejected.

D) cannot be tested using this sample information provided.

Question #41 of 82

Question ID: 438907

Consider the hypotheses structured as H_0: $\mu_1 \leq$ \$48 versus H_a: $\mu_1 >$ \$48. At a 5 percent level of significance, the null hypothesis:

A) cannot be tested using the sample information provided.

B) cannot be rejected.

C) should neither be rejected nor fail to be rejected.

D) should be rejected.

Question #42 of 82

Question ID: 438908

Using a 5 percent level of significance for a test of the null of H_0: $\sigma_1 = \sigma_2$ versus the alternative of H_a: σ_1 ¼ σ_2, the null hypothesis:

A) should neither be rejected nor fail to be rejected.

B) should be rejected.

C) cannot be tested using the sample information provided.

D) cannot be rejected.

Question #43 of 82

Question ID: 438819

A sample covariance for the common stock of the Earth Company and the S&P 500 is −9.50. Which of the following statements regarding the estimated covariance of the two variables is *most* accurate?

A) The two variables will have a strong tendency to move in opposite directions.

B) The two variables will have a slight tendency to move together.

C) The relationship between the two variables is not easily predicted by the calculated covariance.

D) The relationship between the two variables is highly predictable given the calculated covariance.

Question #44 of 82

Question ID: 438830

You observe the following annual returns on a stock portfolio for the last nine years: [5%, 7%, 20%, −4%, 2%, 5%, 13%, 18%, 4%]. Which measure of central tendency has the highest value?

A) For these observations, the mean, median, and mode are equal.

B) The mean.

C) The mode.

D) The median.

Question #45 of 82

Question ID: 438848

The 95 percent confidence interval of the sample mean of the price earnings ratio for all traded stocks is 19 to 44. There are over 5,000 traded stocks and the sample size of this test is 100. Given that the expected value of the price earnings ratio is 31.5, the standard error of the ratio is *closest* to:

A) 2.58.

B) 6.38.

C) 1.96.

D) 12.50.

Question #46 of 82

Question ID: 438902

Abby Ness is an analyst for a firm that specializes in evaluating firms involved in mineral extraction. Ness believes that the earnings of copper extracting firms are more volatile than those of bauxite extraction firms. In order to test this, Ness examines the volatility of returns for 31 copper firms and 25 bauxite firms. The standard deviation of earnings for copper firms was $2.69, while the standard deviation of earnings for bauxite firms was $2.92. Ness's Null Hypothesis is $\sigma_1^2 = \sigma_2^2$. Based on the samples, can we reject the null hypothesis at a 95% confidence level using an F-statistic and why? Null is:

- **A)** rejected. The F-value exceeds the critical value by 0.71.
- **B)** rejected. The F-value exceeds the critical value by 0.849.
- **C)** not rejected. The critical value exceeds the F-value by 0.194.
- **D)** not rejected. The critical value exceeds the F-value by 0.71.

Question #47 of 82

Question ID: 438845

What is the *appropriate* test statistic for constructing confidence intervals for the population mean of a nonnormal distribution when the population variance is unknown and the sample size is large ($n \geq 30$)?

- **A)** The *z*-statistic at α with *n* degrees of freedom.
- **B)** The *t*-statistic at α/2 with *n* degrees of freedom.
- **C)** The *z*-statistic or the *t*-statistic.
- **D)** The *t*-statistic at α with 29 degrees of freedom.

Question #48 of 82

Question ID: 438901

You have collected monthly returns for a mutual fund and want to test the null hypothesis that the standard deviation exceeds the advertised standard deviation of 3.5 percent. The most appropriate test statistic is based on a:

- **A)** chi-square test.
- **B)** t-test.
- **C)** F-test.
- **D)** z-test.

Question #49 of 82

Question ID: 438877

A goal of an "innocent until proven guilty" justice system is to place a higher priority on:

- **A)** avoiding type I errors.
- **B)** the null hypothesis.
- **C)** avoiding type II errors.
- **D)** avoiding type III errors.

Question #50 of 82

Question ID: 438866

Maria Huffman is the Vice President of Human Resources for a large regional car rental company. Last year, she hired Graham Brickley as Manager of Employee Retention. Part of the compensation package was the chance to earn one of the following two bonuses: if Brickley can reduce turnover to less than 30%, he will receive a 25% bonus. If he can reduce turnover to less than 25%, he will receive a 50% bonus (using a significance level of 10%). The population of turnover rates is normally distributed. The population standard deviation of turnover rates is 1.5%. A recent sample of 100 branch offices resulted in an average turnover rate of 24.2%. Which of the following statements is *most* accurate?

A) For the 50% bonus level, the critical value is -1.65 and Huffman should give Brickley a 50% bonus.

B) Brickley should not receive either bonus.

C) For the 50% bonus level, the test statistic is -5.33 and Huffman should give Brickley a 50% bonus.

D) For the 25% bonus level, the test statistic is -10.66.

Question #51 of 82

Question ID: 438820

The mean equity risk premium over a 40-year period is equal to 8.0 percent. The standard deviation of the sample is 12 percent. The standard error of the sample mean is *closest* to:

A) 1.26%.

B) 8.00%.

C) 0.30%.

D) 1.90%.

Question #52 of 82

Question ID: 438843

A nursery sells trees of different types and heights. Suppose that 75 pine trees are sold for planting at City Hall. These 75 trees average 60 inches in height with a standard deviation of 16 inches.

Using this information, construct a 95% confidence interval for the mean height of all trees in the nursery.

A) 0.8 ± 1.96(16).

B) 60 ± 1.96(1.85).

C) 0.8 ± 1.96(1.85).

D) 60 ± 1.96(16).

Question #53 of 82

Question ID: 438844

What is the *appropriate* test statistic for constructing confidence intervals for the population mean of a normal distribution when the population variance is unknown?

A) The *z*-statistic at α with *n* degrees of freedom.

B) The *t*-statistic at α/2 with *n* degrees of freedom.

C) The *z*-statistic with *n* - 1 degrees of freedom.

D) The *t*-statistic at α/2 with *n* - 1 degrees of freedom.

Question #54 of 82

Question ID: 438869

If the null hypothesis is innocence, then the statement "It is better that the guilty go free, than the innocent are punished" is an example of preferring a:

A) two tailed test over a one tailed test.

B) higher level of significance.

C) type II error over a type I error.

D) type I error over a type II error.

Question #55 of 82

Question ID: 438867

A bottler of iced tea wishes to ensure that an average of 16 ounces of tea is in each bottle. In order to analyze the accuracy of the bottling process, a random sample of 150 bottles is taken. Using a *t*-distributed test statistic of -1.09 and a 5% level of significance, the bottler should:

A) reject the null hypothesis and conclude that bottles do not contain an average of 16 ounces of tea.

B) reject the null hypothesis and conclude that bottles contain an average 16 ounces of tea.

C) not reject the null hypothesis and conclude that bottles do not contain an average of 16 ounces of tea.

D) not reject the null hypothesis and conclude that bottles contain an average 16 ounces of tea.

Question #56 of 82

Question ID: 438871

A Type I error:

A) fails to reject a true null hypothesis.

B) rejects a true null hypothesis.

C) fails to reject a false null hypothesis.

D) rejects a false null hypothesis.

Question #57 of 82

Question ID: 438865

Which of the following statements about hypothesis testing is *least* accurate?

A) The null hypothesis is a statement about the value of a population parameter.

B) A Type I error is rejecting the null hypothesis when it is actually true.

C) If the alternative hypothesis is H_a: $\mu > \mu_0$, a two-tailed test is appropriate.

D) A Type II error is failing to reject a false null hypothesis.

Question #58 of 82

Question ID: 438857

In the process of hypothesis testing, what is the proper order for these steps?

A) Specify the level of significance. State the hypotheses. Make a decision. Collect the sample and calculate the sample statistics.

B) State the hypotheses. Collect the sample and calculate the sample statistics. Make a decision. Specify the level of significance.

C) Collect the sample and calculate the sample statistics. State the hypotheses. Specify the level of significance. Make a decision.

D) State the hypotheses. Specify the level of significance. Collect the sample and calculate the test statistics. Make a decision.

Question #59 of 82

Question ID: 438875

A return series with 250 observations has a sample mean of 10 percent and a standard deviation of 15 percent. The standard error of the sample mean is *closest* to:

A) 0.06.

B) 15.80.

C) 3.87.

D) 0.95.

Question #60 of 82

Question ID: 438836

The mean and variance of a sample average help define the distributional characteristics of a sample distribution and allow assumptions to be made about this distribution when the sample size is large. Which of the following choices represent the standard deviation of a sample average?

A) $\sigma(X)^2$

B) 1/n.

C) $\sigma(X)/\sqrt{n}$.

D) $\sigma(X)^2/ n$.

Question #61 of 82

Question ID: 438881

The mean monthly return for an equity portfolio over 60 months is 1.5%. The standard deviation is 3.0%. The value of the test statistic to test the hypothesis that mean monthly return is equal to zero is *closest* to:

A) 3.87.

B) 0.50.

C) 2.19.

D) 30.00

Question #62 of 82

Question ID: 438855

Which of the following statements *least* describes the procedure for testing a hypothesis?

A) Select the level of significance, compute the test statistic, and make a decision.

B) Select the level of significance, formulate the decision rule, and make a decision.

C) Compute the sample value of the test statistic, set up a rejection (critical) region, and make a decision.

D) Develop a hypothesis, compute the test statistic, and make a decision.

Question #63 of 82

Question ID: 438880

Given the following hypothesis:

- The null hypothesis is H_0 : μ = 5
- The alternative is H_1 : μ ≠ 5
- The mean of a sample of 17 is 7
- The population standard deviation is 2.0

What is the calculated z-statistic?

A) 4.00.

B) 4.12.

C) 8.25.

D) 8.00.

Question #64 of 82

Question ID: 438847

A random sample of 100 technology stocks earned an average of 10%. Assuming the distribution of equity returns is normal and the population standard deviation is 5%, the 95% confidence interval for the population mean is:

A) 9.91% to 10.90%.

B) 9.50% to 10.50%.

C) 9.02% to 10.98%.

D) 5.00% to 15.00%.

Question #65 of 82

Question ID: 438874

If the sample size is greater than 30 and population variance is unknown, the appropriate test for the sample mean is the:

A) *p*-test or *F*-test.

B) *t*-test.

C) *z*-test.

D) *t*-test or *z*-test.

Question #66 of 82

Question ID: 438833

A sample of paired points A and B is shown below. What is the covariance between the values of A and B?

Sample	*A*	*B*
1	1	2
2	4	5
3	9	7
4	11	10
5	14	12

A) 82.20.

B) 20.55.

C) 7.80.

D) 29.76.

Question #67 of 82

Question ID: 438856

The first step in the process of hypothesis testing is:

A) the calculation of sample statistics.

B) the collection of the sample.

C) selecting the test statistic.

D) to state the hypotheses.

Question #68 of 82

Question ID: 438826

For the investments shown in the table below, what are the mean, median, and mode of the returns?

Investment	*Return (%)*
A	12
B	14
C	9
D	13
E	7
F	8
G	12

	Mean	Median	Mode
A)	10.71%	12%	12%
B)	12.00%	12%	12%
C)	11.20%	12%	12%
D)	10.71%	9%	13%

Question #69 of 82

Question ID: 438850

A sample of size 25 is selected from a normal population. This sample has a mean of 15 and the population variance is 4.

Using this information, construct a 95% confidence interval for the population mean, m.

A) 15 ± 1.96(0.4).

B) 15 ± 1.96(2).

C) 15 ± 1.96(4).

D) 15 ± 1.96(0.8).

Questions #70-71 of 82

Annual Returns on ABC Mutual Fund									
1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
11.0%	12.5%	8.0%	9.0%	13.0%	7.0%	15.0%	2.0%	-16.5%	11.0%

Question #70 of 82

Question ID: 438828

What is the arithmetic mean return for ABC Mutual Fund for the period 1991-2000?

Arithmetic Mean

A) 28.2%

B) 11%

C) 7.2%

D) 8.2%

Question #71 of 82

Question ID: 438829

Assuming a mean of 7.2%, what is the sample standard deviation of the returns for ABC Mutual Fund for the period 1991-2000?

A) 7.8%.

B) 9.1%.

C) 10.2%.

D) 9.8%.

Question #72 of 82

Question ID: 438903

The sampling distribution of variances is described by which distribution?

A) F-distribution.

B) Student's t-distribution.

C) Normal distribution.

D) Chi-square distribution.

Question #73 of 82

Question ID: 438854

Which of the following is the correct sequence of events for testing a hypothesis?

A) State the hypothesis, select the level of significance, compute the test statistic, formulate the decision rule, and make a decision.

B) State the hypothesis, select the level of significance, formulate the decision rule, compute the test statistic, and make a decision.

C) State the hypothesis, formulate the decision rule, select the level of significance, compute the test statistic, and make a decision.

D) State the hypothesis, formulate the decision rule, compute the test statistic, select the level of significance, and make a decision.

Question #74 of 82

Question ID: 438879

Which of the following statements is **FALSE**?

- **A)** The probability of committing a Type I error is the significance level of the test.
- **B)** If a person is presumed innocent unless proven otherwise, finding a guilty person innocent is an example of a Type I error.
- **C)** Failing to reject the null when it is false is an example of a Type II error.
- **D)** A Type I error is rejecting the null when it is actually true.

Question #75 of 82

Question ID: 438900

In order to test if Stock A is more volatile than Stock B, prices of both stocks are observed to construct the sample variance of the two stocks. The appropriate test statistics to carry out the test is the:

- **A)** Chi-square test.
- **B)** Z test.
- **C)** F test.
- **D)** t test.

Question #76 of 82

Question ID: 438872

In a two-tailed test of a hypothesis concerning whether a population mean is zero, Jack Olson computes a *t*-statistic of 2.7 based on a sample of 20 observations where the distribution is normal. If a 5% significance level is chosen, Olson should:

- **A)** not make a conclusion pending additional observations.
- **B)** reject the null hypothesis and conclude that the population mean is significantly different from zero.
- **C)** reject the null hypothesis and conclude that the population mean is not significantly different from zero.
- **D)** fail to reject the null hypothesis that the population mean is not significantly different from zero.

Question #77 of 82

Question ID: 438831

The last three year-end returns for a stock are 5%, −2%, and 1%. Using an arithmetic mean, the sample standard deviation is *closest* to:

- **A)** 1.33%.
- **B)** 2.87%.
- **C)** 3.11%.
- **D)** 3.51%.

Questions #78-82 of 82

XYZ Corp. Annual Stock Prices

1995	1996	1997	1998	1999	2000
22%	5%	-7%	11%	2%	11%

Question #78 of 82

Question ID: 438838

What is the mean return for XYZ stock?

- **A)** 8.0%.
- **B)** -7.0%.
- **C)** 7.3%.
- **D)** 11.0%.

Question #79 of 82

Question ID: 438839

Assuming that the distribution of XYZ stock returns is a population, what is the population variance (in $\%^2$)?

- **A)** 7.7.
- **B)** 80.2.
- **C)** 5.0.
- **D)** 6.8.

Question #80 of 82

Question ID: 438840

Assuming that the distribution of XYZ stock returns is a population, what is the population standard deviation?

- **A)** 8.96%.
- **B)** 5.02%.
- **C)** 46.22%.
- **D)** 6.84%.

Question #81 of 82

Question ID: 438841

Assuming that the distribution of XYZ stock returns is a sample, what is the sample variance (in $\%^2$)?

- **A)** 7.4.
- **B)** 5.0.
- **C)** 96.3.
- **D)** 72.4.

Question #82 of 82

Question ID: 438842

Assuming that the distribution of XYZ stock returns is a sample, what is the sample standard deviation?

- **A)** 72.4%.
- **B)** 7.4%.
- **C)** 96.3%.
- **D)** 9.8%.